REMARKS

Claims remaining in the present patent application are numbered 1-23. The rejections and comments of the Examiner set forth in the Office Action dated January 15, 2004 have been carefully considered by the Applicants. Applicants respectfully request the Examiner to consider and allow the remaining claims.

Claim Amendments

No changes or amendments to the claims have been made. However, a listing of claims is presented to correct a misspelling in various claims. Specifically, in Applicants' last reply to the final Office Action dated August 28, 2003, the word "signals" in Claims 1, 2, 3, 4, 10, 11, 18, 19, and 20 was misspelled as "Singlas," with no representation by the Applicants that a change or amendment had been made. The list of claims provides the correct representation of the word "signals."

35 U.S.C. §103 Rejection

The present Office Action rejected Claim 1 under 35 U.S.C. 103(a) as being unpatentable over Matsuzaki et al. (U.S. Patent No. 6,140,992), in view of Kim et al. (U.S. Patent No. 5,355,443), and Singla et al. (U.S. Patent No. 6,597,373). Also, Claims 2-4, 7, and 8 are rejected under 35

U.S.C. 103(a) as being unpatentable over Matsuzaki et al. in view of Kim, Hannah (U.S. Patent No. 5,038,297), and Yuki et al. (U.S. Patent No. 5,805,149), further in view of Ogawa et al. (U.S. Patent No. 6,018,331) and Singla et al. Further, Claims 5, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuzaki et al. in view of Kim et al. and Hannah; Yuki et al. and Singla et al. Moreover, Claims 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuzaki et al. in view of Kim et al. and Hannah, further in view of Ogawa et al., and Singla et al. Also, Claims 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuzaki et al. in view of Kim et al. and Hannah and Yuki et al., further in view of Ogawa, Singla, and He et al. (U.S. Patent No. 6323,849).

Applicants have reviewed the above cited references and respectfully submit that the present invention, as recited in Claims 1-23, is neither anticipated nor rendered obvious by the Matsuzaki et al. reference taken alone or in combination with the Singla et al., Kim et al., Hannah, Yuki et al., Ogawa et al., and He et al. references.

Independent Claims 1, 10, and 18

Applicants respectfully point out that embodiments of the present invention as claimed in amended independent Claims 1, 10, and 18 each recite, in part:

> A display unit comprising:
> a display panel comprising a pixel matrix comprising: an (m x n) pixel frame buffer region; and an x pixel border region for only displaying a display attribute, wherein said border region surrounds said frame buffer region . . .
> a border attribute register for containing said display attribute for said border region, <u>wherein said display attribute is selected to provide viewing contrast with image data located near said border region</u> . . . (Emphasis Added)

Specifically, the present invention pertains to a controllable pixel border that surrounds a frame buffer region for improved viewability of a display device. That is, the pixel border displays a display attribute. For instance, the pixel border is useful for increasing viewability, e.g., contrast, of images and/or characters that are displayed along the edge of a frame buffer region.

In particular, embodiments of the present invention as claimed in independent Claims 1, 10, and 18, explicitly state, unlike the prior art references which do not disclose a controllable pixel border region, a pixel border region that displays a display attribute that is selected to provide viewing contrast with images and/or characters in the pixel frame buffer region that are located near the pixel border region (See Specification, page 20 lines 1-2).

Applicants respectfully note that the prior art reference, Matsuzaki et al., does not comprise nor suggest a controllable pixel border region that provides viewing

contrast. The Matsuzaki et al. reference discloses a display control system for controlling the display format to be displayed by a display apparatus. As such, the Matsuzaki et al. reference discloses a border section that displays border pixel data to frame a display image frame. However, Applicants respectfully point out the Matsuzaki et al. reference does not comprise or suggest a pixel border region displaying a display attribute that is selected to provide viewing contrast with images and/or characters near the border region, as in embodiments of the present invention as claimed in independent Claims 1, 10, and 18.

Moreover, the Singla et al. reference fails to remedy the shortcomings of the Matsuzaki et al. reference. Specifically, Applicants respectfully note that the prior art reference, Singla et al., does not comprise nor suggest a controllable pixel border region that provides viewing contrast. In contrast to independent Claims 1, 10, and 18 of embodiments of the present invention, the Singla et al. reference discloses a display controller that is capable of generating image borders based on scanning resolution information. Importantly, the Singla et al. reference determines the appropriate image border based on the resolutions of the image and display device. That is, the resolutions define appropriate x and y coordinates of both the image and the border region, as follows:

> The display TG uses this data to determine the image resolution (X_IMAGExY_IMAGE). The display TG then determines the values shown in FIG. 2 that define border region 106 using the image and display resolutions: X_BORD1, X_BORD2, Y_BORD1, and Y_BORD2. (See col. 3, lines 38-40, and Figure 2 of the Singla et al. reference)

As such, the Singla et al. reference refers to an x and y border resolution of an image border, and does not comprise nor suggest a pixel border region displaying a display attribute that is selected to provide viewing contrast with images and/or characters near the border region, as in embodiments of the present invention as claimed in independent Claims 1, 10, and 18.

Moreover, the Kim et al., Hannah, Yuki et al., Ogawa et al., and He et al. prior art references also do not comprise, suggest, or disclose a pixel border region displaying a display attribute that is selected to provide viewing contrast with images and/or characters near the border region, as in embodiments of the present invention as claimed in independent Claims 1, 10, and 18.

Dependent Claims 2-4

As to Claims 2-4, Applicants respectfully contend that the prior art references do not comprise, suggest, or disclose a second set of signals being generated within invalid timing windows with respect to the frame buffer region, wherein the second set of signals are for displaying

the display attribute for viewing contrast within the border region. In particular, each of the prior art references, Singla et al., Ogawa, and Yuki et al., disclose the generation of a second set of signals within blanking timing windows, etc. for display within a frame buffer region that is designated as a border to an image. That is, in each of the prior art references, border data is generated for display within the frame buffer region. As such, in each of the prior art references, pixels designated as a border at one time in the frame buffer region, can be designated as a displaying image data at another time in the frame buffer region.

In contrast, embodiments of the present invention in dependent Claims 2-4 disclose the generation of a second set of signals within invalid timing windows of the frame buffer region, wherein the second set of signals are for displaying a display attribute that provides viewing contrast in a border region that is separate from the frame buffer region. That is, the x pixel border region is for displaying border display attributes only and not image data.

Dependent Claims 11 and 12

For analogous arguments set forth in relation to dependent Claims 2-4, Applicants respectfully contend that the prior art references, Singla et al., Ogawa, and Yuki et al., do not comprise, suggest, or disclose a second set of

signals being generated within invalid horizontal and vertical timing windows of a first set of signals used for rendering character images within a frame buffer region, wherein the second set of signals are for displaying a display attribute that provides viewing contrast in a border region that is separate from the frame buffer region, as is disclosed in embodiments of the present invention of dependent Claims 11 and 12. That is, pixels in the frame buffer region are for displaying images, and pixels in the x-pixel border region are for only displaying border attribute data, and never image data.

Dependent Claims 19 and 20

For analogous arguments set forth in relation to dependent Claims 2-4 and Claims 11 and 12, Applicants respectfully contend that the prior art references, Singla et al., Ogawa, and Yuki et al., do not comprise, suggest, or disclose a second set of signals being generated within video timing windows that contain invalid data of a first set of signals used for rendering character images within a frame buffer region, wherein the second set of signals are for displaying a display attribute that provides viewing contrast in a border region that is separate from the frame buffer region, as is disclosed in embodiments of the present invention of dependent Claims 19 and 20. That is, pixels in the frame buffer region are for displaying images, and pixels

in the x-pixel border region are for only displaying border attribute data, and never image data.

Thus, Applicants respectfully content that embodiments of the present invention as claimed in independent Claims 1, 10, and 18 are neither anticipated nor rendered obvious by the Matsuzaki et al., taken alone or in combination with the Singla et al., Kim et al., Hannah, Yuki et al., Ogawa et al., and He et al. references, and are in a condition for allowance. As a result, Applicants respectfully submit that Claims 2-9 which depend from independent Claim 1, as currently amended, are also in a condition for allowance as being dependent on an allowable base claim. Also, Applicants respectfully submit that Claims 11-17 which depend from independent Claim 10, as currently amended, are also in a condition for allowance as being dependent on an allowable base claim. Further, Applicants respectfully submit that Claims 19-23 which depend from independent Claim 18, as currently amended, are also in a condition for allowance as being dependent on an allowable base claim.

CONCLUSION

In light of the facts and arguments presented herein, Applicants respectfully request reconsideration of the rejected Claims.

Based on the arguments presented above, Applicants respectfully assert that Claims 1-23 overcome the rejections of record. Therefore, Applicants respectfully solicit allowance of these Claims.

The Examiner is invited to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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